



PATENT
Attorney Docket No. MSU-07769

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Christoph H. Benning *et al.*
Serial No.: 10/620,914 Group No.: 1638
Filed: 07/16/03 Examiner: Collins, C
Entitled: **Compositions and Methods For The Protection of
Betaine Lipids**

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)(1)(i)(A)

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: April 18, 2006

By: 

Kelly J. Collins

Sir or Madam:

Enclosed please find an Information Disclosure Statement and Form PTO-1449, including copies of the references contained thereon, for filing in the U.S. Patent and Trademark Office.

A check for \$180.00 is also enclosed pursuant to 37 C.F.R. § 1.17(p) for filing this Information Disclosure Statement after three months as set forth in 37 C.F.R. § 1.97(c).

The Commissioner is hereby authorized to charge any additional fee or credit overpayment to our Deposit Account No. 08-1290. **An originally executed duplicate of this transmittal is enclosed for this purpose.**

Dated: April 18, 2006



Thomas W. Brown
Registration No. 50,002

MEDLEN & CARROLL, LLP
101 Howard Street, Suite 350
San Francisco, California 94105
617/984.0616

04/24/2006 SFELEKE1 00000071 10620914

01 FC:1006 180.00 OP



PATENT
Attorney Docket No. MSU-07769

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Christoph H. Benning *et al.*
Serial No.: 10/620,914 Group No.: 1638
Filed: 07/16/03 Examiner: Collins, C
Entitled: **Compositions and Methods for the Protection of
Betaine Lipids**

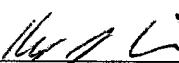
INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)(1)(i)(A)

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

Dated: April 18, 2006

By: 

Kelly J. Collins

Sir or Madam:

The citations listed below, copies attached, may be material to the examination of the above-identified application, and are therefore submitted in compliance with the duty of disclosure defined in 37 C.F.R. §§ 1.56 and 1.97. The Examiner is requested to make these citations of official record in this application.

The following printed publications are referred to in the body of the specification:

- U.S. Patent No. 4,683,195 to Mullis *et al.*;
- U.S. Patent No. 4,683,202 to Mullis;
- U.S. Patent No. 4,965,188 to Mullis *et al.*;
- U.S. Patent No. 5,584,807 to McCabe;
- U.S. Patent No. 6,091,003 to Guo-Ling Nan *et al.*;
- Anderson and Young, Quantitative Filter Hybridization, *in Nucleic Acid*

04/24/2006 SFELEKE1 00000071 10620914
100.00 0P
01 FC:1806

Hybridization, 1985¹;

- Arondel *et al.*, "Isolation and Functional Expression in *Escherichia coli* of a Gene Encoding Phosphatidylethanolamine Methlytransferase (EC 2.1.1.17) from *Rhodobacter sphaeroides*," *J. Biol. Chem.*, 268(21): 16002-16008, 1993;
- Bäumlein *et al.*, "A novel seed protein gene from *Vicia faba* is developmentally regulated in transgenic tobacco and *Arabidopsis* plants," *Mol. Gen. Genet.*, 225: 459-467, 1991;
- Becker, D., "Binary vectors which allow the exchange of plant selectable markers and reporter genes," *Nucleic Acids Res.*, 18:203, 1990;
- Benning *et al.*, "Accumulation of a Novel Glycolipid and a Betaine Lipid in Cells of *Rhodobacter sphaeroides* Grown Under Phosphate-Limitation," *Arch. Biochem. Biophys.*, 317: 103-111, 1995;
- Benning C. & Sommerville CR., "Isolation and Genetic Complementation of a Sulfolipid-Deficient Mutant of *Rhodobacter sphaeroides*," *J. Bacteriol.*, 174: 2352-2360, 1992;
- Camelo, L. Guiffre de Lopez *et al.*, "Heavy Metals Input with Phosphate Fertilizers used in Argentina" *Sci. Total Environ.*, 204(3):245-250, 1997;
- Carter *et al.*, "Improved oligonucleotide site-directed mutagenesis using M13 vectors" *Nucl. Acids. Res.*, 13: 4431-4443, 1985²;
- S. Clough and A. Brent, "Floral dip: a simplified method for Agrobacterium-mediated transformation of *Arabidopsis thaliana*," *Plant J.*, 16: 735-43, 1998;
- Crea *et al.*, "Chemical synthesis of genes for human insulin" *Proc Natl Acad Sci USA*, 75:5765, 1978;
- Dieffenbach and Dveksler, *PCR Primer, a Laboratory Manual*, Cold Spring Harbor Press, Plainview NY, 1995³;
- Evans *et al.*, "Identification of diacylglycerol-*O*(*N,N,N*-trimethyl)-homoserine in the halotolerant alga, *dunaliella parva*," *Chem. Phys. Lipids*, 31: 331-338, 1982;
- Fiedler *et al.*, "A complex ensemble of cisregulatory elements controls the expression of a *Vicia faba* non-storage seed protein gene," *Plant Mol. Biol.*, 22: 669-679, 1993;
- Fluhr *et al.*, "Expression and dynamics of the pea *rbcS* multigene family and organ distribution of the transcripts," *EMBO J.*, 5: 2063-2071, 1986;
- Gordon-Kamm *et al.*, "Transformation of Maize Cells and Regeneration of Fertile Transgenic Plants," *Plant Cell*, 2: 603, 1990;
- Maxam, A.M. and Gilbert, W., "Sequencing end-labelled DNA with base-specific chemical cleavages," *Meth Enzymol.*, 65: 499-560, 1980⁴;
- Messing *et al.*, "A system for shotgun DNA sequencing," *Nucleic Acids Res.*, 9: 309, 1981;
- Neumann *et al.*, "Gene transfer into mouse lymphoma cells by electroporation in high

¹ Because this is a general text that was cited in the specification without direction to any specific page, applicants have not included any excerpts with this IDS.

² This reference was improperly cited in the specification as 'Carter *et al.*, *Nucl. Acids. Res.*, 13: 4331, 1986'.

³ Because this is a general text that was cited in the specification without direction to any specific page, applicants have not included any excerpts with this IDS.

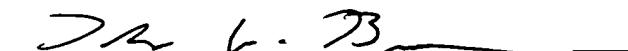
⁴ We have been unable to obtain this reference, but if the examiner requests a copy we will seek to obtain it.

electric fields," *EMBO J.*, 1:841, 1982;

- Ormerod *et al.*, "Light-dependent utilization of organic compounds and photoreduction of molecular hydrogen by photosynthetic bacteria; relationships with nitrogen metabolism" *Arch. Biochem. Biopsy.*, 94:449-463, 1961;
- Sambrook *et al.*, "Molecular Biology: A Laboratory Manual," Cold Spring Harbor Press, Cold Spring Harbor, N.Y., 1989⁵;
- Sanger *et al.*, "DNA sequencing with chain-terminating inhibitors," *Proc Natl. Acad. Sci. USA*, 74: 5463-5467, 1977;
- Sato, N and Furuya, M., "Isolation and Identification of Diacylglycerol-*O*-4'-(*N,N,N*-trimethyl)- homoserine from the Fern *Adiantum capillus-veneris* L" *Plant Cell Phusiol.*, 21: 1113-1120, 1983;
- Short *et al.*, "λ ZAP: a bacteriophage λ expression vector with *in vivo* excision properties," *Nucleic Acids Res.*, 16: 7583-7599, 1988;
- Sistrom W.R., "A requirement of sodium in the growth of *R. sphaeroides*" *J. Gen. Microbiol.* 22:778-785, 1960;
- Sistrom W.R., "The kinetics of the synthesis of photopigments in *R. sphaeroides*," *J. Gen. Microbiol.* 28:607-616, 1962;
- Vieira and Messing, *Meth Enzymol.*, 153: 3-11, 1987⁶;
- Vogel, "A convenient growth medium for Neurospora," *Microbiol. Genetics Bull.*, 13:42-43, 1956;
- Vogel *et al.*, "1(3),2-Diacylglycerol-3(1)-*O*-2'-(hydroxymethyl)(*N,N,N*-trimethyl)-β-alanine (DGTA): A novel betaine lipid from *Ochromonas danica* (Chrysophyceae)," *Chem. Phys. Lipids*, 52: 99-109, 1990;
- Von Schaeven, A., Ph.D. thesis, Freie Universität Berlin, 1989; and
- Zoller *et al.*, "Oligonucleotide-directed mutagenesis using M13-derived vectors: an efficient and general procedure for the production of point mutations in any fragment of DNA," *Nucl. Acids Res.*, 10: 6487, 1987.

This Information Disclosure Statement under 37 C.F.R. §§ 1.56 and 1.97 is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that any one or more of these citations constitutes prior art.

Dated: April 18, 2006



Thomas W. Brown
Registration No. 50,002

MEDLEN & CARROLL, LLP
101 Howard Street, Suite 305
San Francisco, California 94105
617.252.3353

⁵ Because this is a general text that was cited in the specification without direction to any specific page, applicants have not included any excerpts with this IDS.

⁶ We have been unable to obtain this reference, but if the examiner requests a copy we will seek to obtain it.

FORM PTO-149 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.: MSU-07769	Serial No.:10/620,914
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)		Applicant: Christoph H. Benning <i>et al.</i>	
(37 CFR § 1.98(b))		Filing Date:07/16/03	
Group Art Unit: 1638			

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
	1	4,683,195	07/28/1987	Mullis <i>et al.</i>	435	6	08/07/1986
	2	4,683,202	07/28/1987	Mullis	435	91	10/25/1985
	3	4,965,188	10/23/1990	Mullis <i>et al.</i>	435	6	06/17/1987
	4	5,584,807	12/17/1996	McCabe	604	71	01/20/1995
	5	6,091,003	07/18/2000	Guo-Ling Nan <i>et al.</i>	435	69.1	05/14/1998
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						

FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

		Document Number	Publication Date	Country / Patent Office	Class	Subclass	Translation	
							Yes	No
	17							
	18							

OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

19	Arondel <i>et al.</i> , "Isolation and Functional Expression in <i>Escherichia coli</i> of a Gene Encoding Phosphatidylethanolamine Methyltransferase (EC 2.1.1.17) from <i>Rhodobacter sphaeroides</i> ," <i>J. Biol. Chem.</i> , 268(21): 16002-16008, 1993
20	Bäumlein <i>et al.</i> , "A novel seed protein gene from <i>Vicia faba</i> is developmentally regulated in transgenic tobacco and <i>Arabidopsis</i> plants," <i>Mol. Gen. Genet.</i> , 225: 459-467, 1991
21	Becker, D., "Binary vectors which allow the exchange of plant selectable markers and reporter genes," <i>Nucleic Acids Res.</i> , 18:203, 1990
22	Benning <i>et al.</i> , "Accumulation of a Novel Glycolipid and a Betaine Lipid in Cells of <i>Rhodobacter sphaeroides</i> Grown Under Phosphate-Limitation," <i>Arch. Biochem. Biophys.</i> , 317: 103-111, 1995
23	Benning C. & Sommerville CR., "Isolation and Genetic Complementation of a Sulfolipid-Deficient Mutant of <i>Rhodobacter sphaeroides</i> ," <i>J. Bacteriol.</i> , 174: 2352-2360, 1992
24	Camelo, L. Guiffre de Lopez <i>et al.</i> , "Heavy Metals Input with Phosphate Fertilizers used in Argentina" <i>Sci. Total Environ.</i> , 204(3):245-250, 1997
25	Carter <i>et al.</i> , "Improved oligonucleotide site-directed mutagenesis using M13 vectors" <i>Nucl. Acids. Res.</i> , 13: 4431-4443, 1985
26	S. Clough and A. Brent, "Floral dip: a simplified method for Agrobacterium-mediated transformation of <i>Arabidopsis thaliana</i> ," <i>Plant J.</i> , 16: 735-43, 1998
27	Crea <i>et al.</i> , "Chemical synthesis of genes for human insulin" <i>Proc Natl Acad Sci USA</i> , 75:5765, 1978

Examiner:	Date Considered:
-----------	------------------

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.: MSU-07769	Serial No.: 10/620,914
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary) (37 CFR § 1.98(b))		Applicant: Christoph H. Benning <i>et al.</i>		
		Filing Date: 07/16/03		Group Art Unit: 1638
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)				
28	Evans <i>et al.</i> , "Identification of diacylglycerol- <i>O</i> (<i>N,N,N</i> -trimethyl)-homoserine in the halotolerant alga, <i>dunaliella parva</i> ," <i>Chem. Phys. Lipids</i> , 31: 331-338, 1982			
29	Fiedler <i>et al.</i> , "A complex ensemble of cisregulatory elements controls the expression of a <i>Vicia faba</i> non-storage seed protein gene," <i>Plant Mol. Biol.</i> , 22: 669-679, 1993			
30	Fluhr <i>et al.</i> , "Expression and dynamics of the pea <i>rbcS</i> multigene family and organ distribution of the transcripts," <i>EMBO J.</i> , 5: 2063-2071, 1986			
31	Gordon-Kamm <i>et al.</i> , "Transformation of Maize Cells and Regeneration of Fertile Transgenic Plants," <i>Plant Cell</i> , 2: 603, 1990			
32	Messing <i>et al.</i> , "A system for shotgun DNA sequencing," <i>Nucleic Acids Res.</i> , 9: 309, 1981			
33	Neumann <i>et al.</i> , "Gene transfer into mouse lymphoma cells by electroporation in high electric fields," <i>EMBO J.</i> , 1:841, 1982			
34	Ormerod <i>et al.</i> , "Light-dependent utilization of organic compounds and photoreduction of molecular hydrogen by photosynthetic bacteria; relationships with nitrogen metabolism" <i>Arch. Biochem. Biophys.</i> , 94:449-463, 1961			
35	Sambrook <i>et al.</i> , "Molecular Biology: A Laboratory Manual," Cold Spring Harbor Press, Cold Spring Harbor, N.Y., 1989			
36	Sanger <i>et al.</i> , "DNA sequencing with chain-terminating inhibitors," <i>Proc Natl. Acad. Sci. USA</i> , 74: 5463-5467, 1977			
37	Sato, N and Furuya, M., "Isolation and Identification of Diacylglycerol- <i>O</i> -4'-(<i>N,N,N</i> -trimethyl)- homoserine from the Fern <i>Adiantum capillus-veneris</i> L" <i>Plant Cell Physiol.</i> , 21: 1113-1120, 1983			
38	Short <i>et al.</i> , "λ ZAP: a bacteriophage λ expression vector with <i>in vivo</i> excision properties," <i>Nucleic Acids Res.</i> , 16: 7583-7599, 1988			
39	Sistrom W.R., "A requirement of sodium in the growth of <i>R. sphaeroides</i> " <i>J. Gen. Microbiol.</i> 22:778-785, 1960			
40	Sistrom W.R., "The kinetics of the synthesis of photopigments in <i>R. sphaeroides</i> ," <i>J. Gen. Microbiol.</i> 28:607-616, 1962			
41	Vogel, "A convenient growth medium for Neurospora," <i>Microbiol. Genetics Bull.</i> , 13:42-43, 1956			
42	Vogel <i>et al.</i> , "1(3),2-Diacylglycerol-3(1)- <i>O</i> -2'-(hydroxymethyl)(<i>N,N,N</i> -trimethyl)-β-alanine (DGTA): A novel betaine lipid from <i>Ochromonas danica</i> (Chrysophyceae)," <i>Chem. Phys. Lipids</i> , 52: 99-109, 1990			
43	Von Schaeven, A., Ph.D. thesis, Freie Universität Berlin, 1989			
44	Zoller <i>et al.</i> , "Oligonucleotide-directed mutagenesis using M13-derived vectors: an efficient and general procedure for the production of point mutations in any fragment of DNA," <i>Nucl. Acids Res.</i> , 10: 6487, 1987			
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
Examiner:		Date Considered:		
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				